

TTC4 siRNA (m): sc-154778

BACKGROUND

The tetratricopeptide repeat (TPR) motif is a degenerate, 34 amino acid sequence found in many proteins and acts to mediate protein-protein interactions in various pathways. At the sequence level, there can be up to 16 tandem TPR repeats, each of which has a helix-turn-helix shape that stacks on other TPR repeats to achieve ligand binding specificity. TTC4 (tetratricopeptide repeat domain 4) is a 387 amino acid ubiquitously expressed nucleoplasmic protein containing three TPR repeats. TTC4 localizes to the cytoplasm, however, when paired with MSL-1, TTC4 translocates to the nucleus during the G₁ and S phases of the cell cycle. TTC4 interacts with HSP 90, HSP 70 and with the replication protein Cdc6 and may be associated with the progression of malignant melanoma. The gene encoding TTC4 is located on human chromosome 1p32.3, which spans about 260 million base pairs and comprises nearly 8% of the human genome.

REFERENCES

1. Su, G., et al. 1999. TTC4, a novel human gene containing the tetratricopeptide repeat and mapping to the region of chromosome 1p31 that is frequently deleted in sporadic breast cancer. *Genomics* 55: 157-163.
2. Hey, Y., et al. 2000. Assignment of TTC4 to human chromosome band 1p31.3 and a pseudogene TTC4P to 7p14→p13 by *in situ* hybridization. *Cytogenet. Cell Genet.* 88: 272-274.
3. Su, G., et al. 2000. Genomic structure of the human tetratricopeptide repeat-containing gene, TTC4, from chromosome region 1p31 and mutation analysis in breast cancers. *Int. J. Mol. Med.* 5: 197-200.
4. Poetsch, M., et al. 2000. TTC4, a novel candidate tumor suppressor gene at 1p31 is often mutated in malignant melanoma of the skin. *Oncogene* 19: 5817-5820.
5. Irwin, N., et al. 2002. Lack of TTC4 mutations in melanoma. *J. Invest. Dermatol.* 119: 186-187.
6. Moir, R.D., et al. 2004. Tetratricopeptide repeats of Tfc4 and a limiting step in the assembly of the initiation factor TFIIB. *Adv. Protein Chem.* 67: 93-121.
7. Dmitriev, R.I., et al. 2007. Characterization of hampin/MSL1 as a node in the nuclear interactome. *Biochem. Biophys. Res. Commun.* 355: 1051-1057.

CHROMOSOMAL LOCATION

Genetic locus: Ttc4 (mouse) mapping to 4 C7.

PRODUCT

TTC4 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TTC4 shRNA Plasmid (m): sc-154778-SH and TTC4 shRNA (m) Lentiviral Particles: sc-154778-V as alternate gene silencing products.

For independent verification of TTC4 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-154778A, sc-154778B and sc-154778C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

TTC4 siRNA (m) is recommended for the inhibition of TTC4 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

TTC4 (F-8): sc-377329 is recommended as a control antibody for monitoring of TTC4 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TTC4 gene expression knockdown using RT-PCR Primer: TTC4 (m)-PR: sc-154778-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.